

## **U.S.-China Marine and Fishery Science and Technology Protocol**

The United States and China signed the U.S.-China Science and Technology Agreement in Washington, D.C., on [January 31, 1979](#). Under this Agreement is the Marine and Fishery Science and Technology Protocol that was signed on May 8, 1979. The Protocol was renewed and extended on December 28, 2009 for another five-year period. NOAA is the lead U.S. agency for this protocol; the State Oceanic Administration (SOA) is the lead agency for China. NOAA's Office of Oceanic and Atmospheric Research (OAR) currently serves as the lead Line Office (LO) for the administration of this Protocol with the Assistant Administrator for Research serving as the U.S. Chair. Joint Working Group (JWG) meetings are generally held on a biennial basis.

The Objectives for the Marine and Fishery Science and Technology Protocol are:

- To promote diplomatic relations with China;
- To exchange spatial and historical data and information unique to the two countries;
- To make marine and fishery research more cost effective;
- To achieve more global coverage for marine and scientific studies, including PRC-controlled waters;
- To enhance marine and fishery science and technology activities; and
- To assist China in becoming a contributing member of the oceanographic research community.

The Protocol contains five major areas of cooperation where bilateral panels have been set up to meet periodically:

- Oceanographic Data and Information,
- The Role of the Oceans in Climate Change,
- Marine Policy, Management, and International Marine Affairs
- Living Marine Resources, and
- Polar Sciences

### Outcomes of the 18<sup>th</sup> Joint Working Group Meeting

The 18<sup>th</sup> Joint Working Group meeting was held in Beijing, China on March 7-8, 2011. The State Oceanic Administration (SOA) proposed a *2011-2015 Framework Plan for Ocean Science and Technology Cooperation* that would promote a large-scale, multidisciplinary, and long-term joint program in the Indian Ocean and Southern Ocean using an innovative and practical approach, and strengthen communication and exchange of the personnel such as agency officials and scientists. Both NOAA and SOA agreed to use the Framework Plan as the basis to formulate a 5-year work plan for NOAA-SOA collaboration. A joint program entitled *The Role of the Oceans in Climate: Observations, Prediction, and Uncertainty Estimation of Interannual and Multi-decadal Variability* was proposed by SOA as part of the Framework Plan and is being explored. The 19<sup>th</sup> Joint Working Group meeting will be held in the U.S. in Spring/Summer 2014.

NOAA Chair: Dr. Robert Detrick, NOAA Assistant Administrator for Research

### Outcomes of the 2<sup>nd</sup> Marine Science Forum

The 2<sup>nd</sup> Marine Science Forum between NOAA and the State Oceanic Administration (SOA) of China occurred on November 21-22, 2011 in Silver Spring, MD. NOAA and SOA reached agreement on the contents of the *2011-2015 Framework Plan for Ocean Science and Technology Cooperation* during the Forum. Progress was made on the joint project initially proposed by SOA during the Joint Working Group meeting in March 2011. The joint program was renamed *Indian-Southern Ocean Climate Observation, Reanalysis and Prediction (ISOCORE)*. Following the meeting, SOA sent a revised version of the proposal for this joint program for a more in-depth and thorough review by NOAA. One or two meetings are planned to help further the development of the joint program. The 3<sup>rd</sup> Marine Science Forum is planned to be held in China in Fall/Winter 2014.

NOAA Chair: Dr. Robert Detrick, NOAA Assistant Administrator for Research

### Oceanographic Data and Information:

The 9<sup>th</sup> Oceanographic Data and Information Panel was held in Silver Spring, MD in September 2009. The U.S. emphasis at this Panel meeting was the improvement of data sharing/exchange (including real-time and near real-time data) from SOA which had diminished over a number of years. As a result of this meeting, archived data sets were provided, but additional Chinese data sets have been provided since the panel meeting (despite agreements made at the Panel meeting to do so). Real time or near-real time data has not been provided despite numerous requests via correspondence and at various meetings such as the U.S.-China Marine Science Forum held in Xiamen, China in November 2008. The issue of sharing SOA real-time or near real-time data (including satellite data) remains unresolved. NOAA may propose to discontinue this Panel at the next Joint Working Group meeting if the data sharing/exchange issue remains unresolved.

NOAA Chair: Dr. Margarita Gregg, Director, National Oceanographic Data Center

### The Role of the Oceans in Climate Change:

At the 18<sup>th</sup> Joint Working Group meeting, both sides discussed potential joint activities in the Indian and Southern Oceans with an emphasis on ocean climate observations and modeling. A joint program entitled *The Role of the Oceans in Climate: Observations, Prediction, and Uncertainty Estimation of Interannual and Multi-decadal Variability* was proposed by SOA in support of the *2011-2015 Framework Plan for Ocean Science and Technology Cooperation* (also proposed by SOA). Further discussion will be necessary to develop a detailed plan of action. An agreement was made to share any data need for and/or produced from joint activities engaged in under the Panel. During the 2<sup>nd</sup> Marine Science Forum held in Silver Spring, MD on November 21-22, 2011.

NOAA Chair (Acting): Mr. Rene Eppli, Director, OAR International Activities Office

### Living Marine Resources (LMR):

Discussions on new collaboration between NOAA Fisheries and the Chinese Academy of Fishery Sciences (CAFS) occurred during the 18<sup>th</sup> Joint Working Group meeting. Expansion of the focus of the Panel was discussed as well as the alignment of the joint Panel priorities with the *2011-2015 Framework Plan for Ocean Science and Technology Cooperation*. This resulted in NOAA hosting the 8<sup>th</sup> Living Marine Resources (LMR) Panel meeting in Silver Spring, MD on June 13-15, 2011. These discussions initiated research collaborations, joint workshops, and scientist exchanges on aquaculture, protected species, and habitat monitoring, assessment and restoration of reef systems throughout 2011 and 2012.

The 9<sup>th</sup> LMR Panel meeting was held in Shanghai, PRC on October 19-23, 2012. Following this meeting, NMFS staff visited CAFS' institutes in Shanghai and Qingdao, aquaculture and seafood processing facilities at Weihai, Shandong Province, and attended the CAFS Forum on Fishery Science and Technology. In 2012 and 2013, additional workshops and scientist exchanges focused on aquaculture, fisheries survey and assessment techniques, and oil spill impacts on living marine resources.

The tenth LMR Panel meeting was held in Seattle, Washington on February 13-14, 2014. The panel reviewed the status of joint activities and planned future collaborations to advance research in the following areas:

1. Aquaculture (including genetics, stock enhancement, alternative feeds, and environmental monitoring and modeling)
2. Assessment of reef systems (including the development of stock assessment models and survey techniques)
3. Marine mammals and sea turtles (including research on western gray whales, spotted seals, and sea turtles)
4. Remote sensing of coastal habitats and ecosystem changes
5. Climate impacts on krill
6. Oyster reef ecology
7. Assessment methods for oil spill impacts on living marine resources
8. Fisheries stock assessments for tropical marine ecosystems

The eleventh LMR Panel meeting is planned for fall/winter 2015 in Guangdong Province, PRC.

NOAA Chair: Dr. Ned Cyr, Director, NMFS Office of Science and Technology

Marine Policy, Management, and International Marine Affairs:

1. NOAA-NOS and the APEC Marine Sustainable Development Center at SOA's Third Institute of Oceanography in Xiamen have conducted two training on "Coastal and Marine Spatial Planning" for (2011, 2013). A third training is under planning to be conducted in the fall of 2014 (subject to a project proposal submitted to APEC sponsored by SOA).
2. NOS-IPO Director attended the first project steering committee (PSC) of the GEF-funded SOA/FAO "Demonstration of Estuarine Biodiversity Restoration and Protected Area Networking in China" project (Guangzhou, June, 2013). NOS-IPO is member of the PSC and will facilitate any potential NOAA staff participation during the project.
3. Coordinate hosting SOA scientist for a one-year research period (starting Summer 2013) at NOS-COOPS, NOS-CSC, and OAR-GLERL.
4. Bilateral dialogue in multilateral venues (e.g., APEC-OFWG, IOC/UNESCO).

NOAA Chair: Dr. Clement Lewsey, Director, NOS International Program Office  
Polar Sciences:

At the 18<sup>th</sup> Joint Working Group meeting, both NOAA and SOA agreed that the Polar Science Panel has been an effective mechanism for promoting collaboration between China and the US and wish for the Panel to continue its work. The *2011-2015 Framework Plan for Ocean Science and Technology Cooperation* presented by SOA contains polar science elements. In addition, both NOAA and SOA presented specific science topics that were of mutual interest. Much of the cooperation in polar sciences between NOAA and SAO is accomplished through collaborative activities facilitated through the Pacific Arctic Group.

NOAA Chair: Dr. Kathy Crane, NOAA (OAR) Arctic Research Program Office

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